



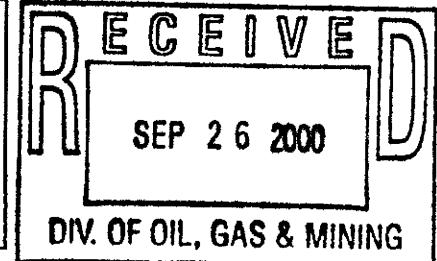
environmental consultants, inc.

m/023/007

8160 South Highland Drive • Sandy, Utah 84093 • Phone (801) 943-4144 • Fax: (801) 942-1852

**FAX TRANSMISSION COVER SHEET**

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**FAX #: (801) 942-1852**

**Date:** September 26, 2000**Time:** 9:08 A.M.

**To:** Doug Jensen - UDOGM - 359-3940  
Beth Wondimu - UDWQ - 538-6016  
Steve Flechner and Gene Webb - North Lily - (303) 293-2235  
Walt Shubert -(435) 843-8894

**Fax:** \_\_\_\_\_**Subject:** Information for 9:30 A.M. Conference Call**From:** Bob Bayer


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0047

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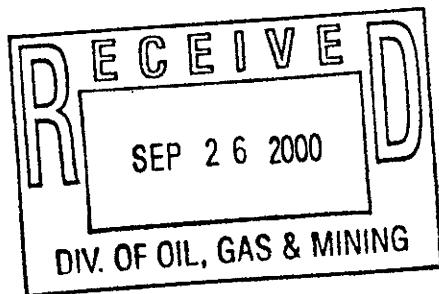
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Eldo, Nevada  
(775) 738-8766  
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Boise, Idaho  
(208) 888-6166  
Fax: (208) 888-5575

**MEMORANDUM****JBR ENVIRONMENTAL CONSULTANTS, INC.****September 25, 2000**

**TO:** Mr. Doug Jensen, UDOGM  
Ms. Beth Wondimu, UDWQ  
Messrs. Steve Flechner and Gene Webb, North Lily  
Mr. Walt Shubert

**FROM:** Bob Bayer

**SUBJECT:** North Lily Mining Company, Silver City Facility Information Transmittal: Weekly Fluids Report and Data Summary; Leach Pad Material Fertility Analyses; Analytical Results for Meteoric Water Mobility Extracts; TCLP Analysis of Barren Pond Residue

The subject information is provided in Attachments 1, 2, and 3, respectively. Noteworthy summary comments or my initial observations or opinions are as follows:

**Weekly Fluids Report and Data Summary**

- The return rate of fluid from the leach pad to the preg. pond continues to decrease.
- The fluid volume pumped from the preg. pond leak detection sump appears to remain relatively constant, at or just below 500 gallons per week, since August 14, 2000.
- Significant electrical pump problems have occurred over the last week; however, the functioning of the two enhanced evaporation systems has not been significantly affected.

**Leach Pad Materials Fertility Analyses**

- I have not yet had the analyses reviewed by one of JBR's soils specialists; however, from my point of view, the soils seem to be limey, sodic, and saline. I am looking forward to hearing Lynn Kunzler's assessment.

**Analytical Results for Meteoric Water Mobility Extracts**

- Utah Ground Water Quality Standards were exceeded in both sample extracts for nitrite, arsenic, and lead. The standard for nitrate was exceeded in one of the two samples.

- Regarding nitrate and nitrite, the concentrations are so low relative to the standards that surface water impacts are very unlikely, especially since these anions can be taken up by plants that any sheet wash leaving the pad would encounter.
- Numerous studies have documented that arsenic is readily attenuated in soils (refer to USMX Goldstrike, for example). The levels reported in the extracts are low and would either be attenuated during infiltration or diluted to insignificantly low concentrations in storm water flow.
- The attenuation mechanisms (co-precipitation with Fe/Mn oxides) that control lead mobility are those that control arsenic; therefore, lead would likely attenuate during infiltration.

#### TCLP Analysis of Barren Pond Residue

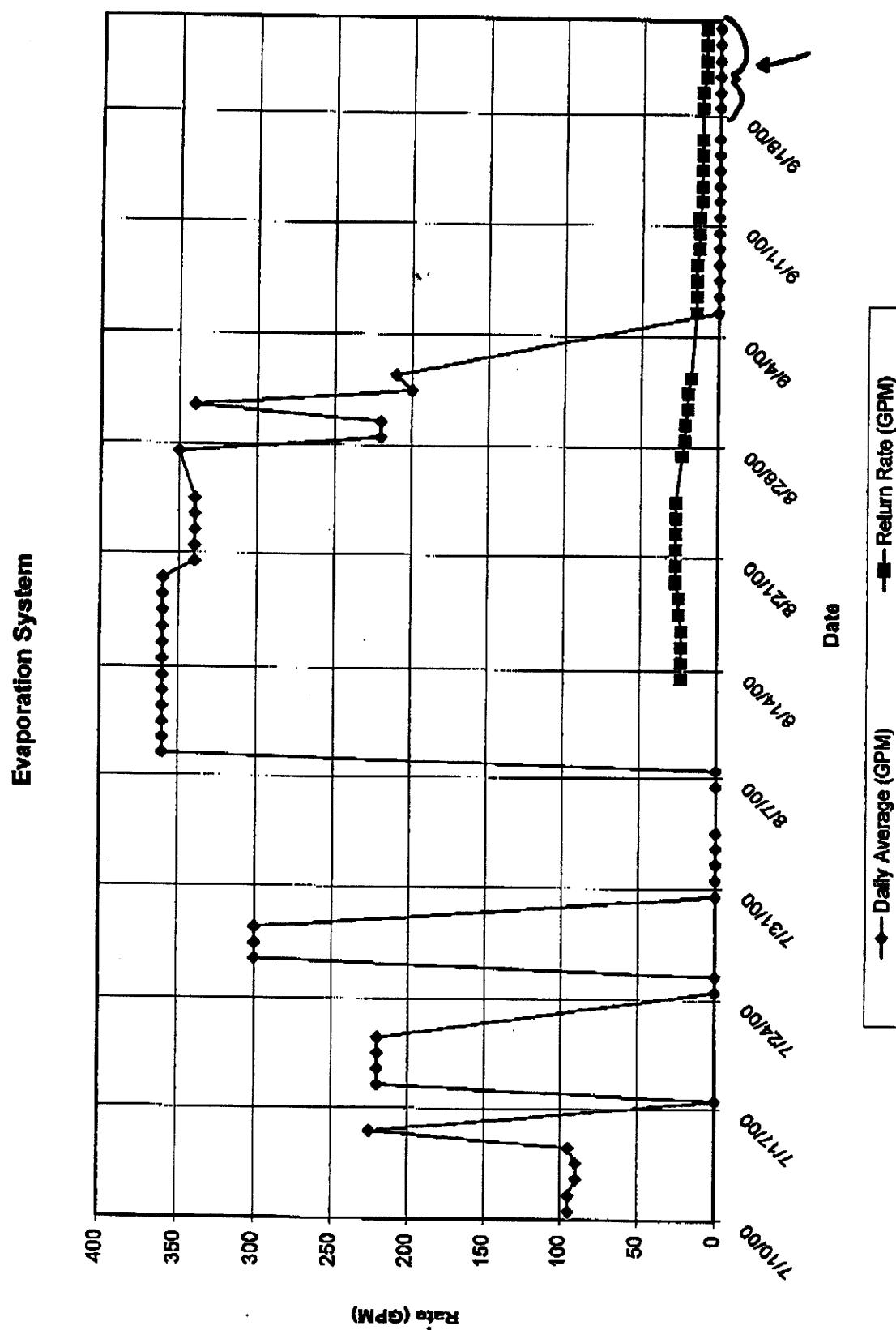
- This analysis was received at JBR over three weeks ago and misplaced (filed with the invoice).
- Concentrations for the eight RCRA metals were all well below the regulatory level established by EPA with the exception of mercury. Since the material would be RCRA-exempt under Bevill (beneficiation waste), the material is not a hazardous waste; however, this result does, nevertheless, somewhat complicate its handling. I have further assessment to do on this issue before I can recommend a next step.

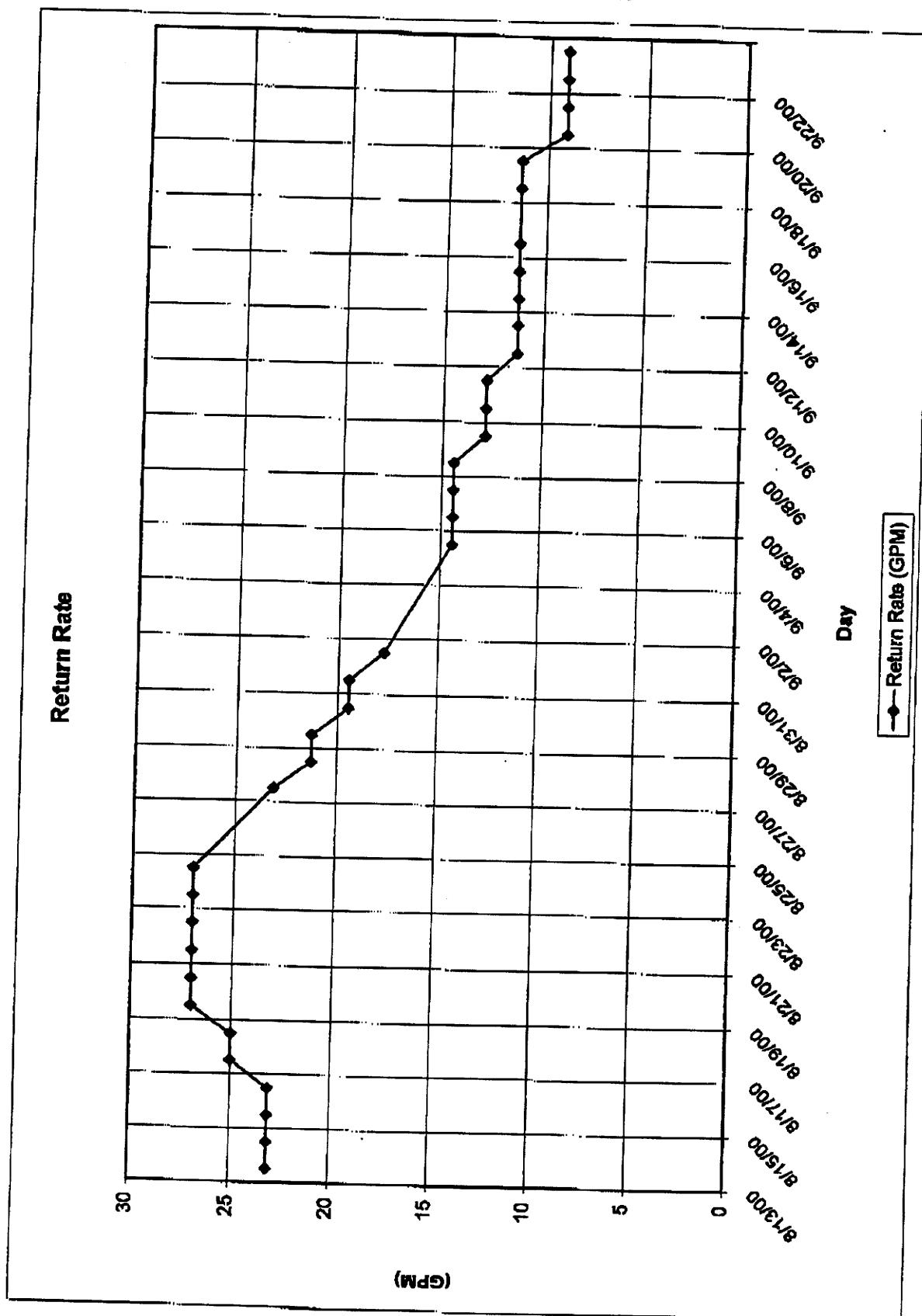
**Attachment 1**  
**Weekly Fluids Report and Data Summary**  
**September 25, 2000**

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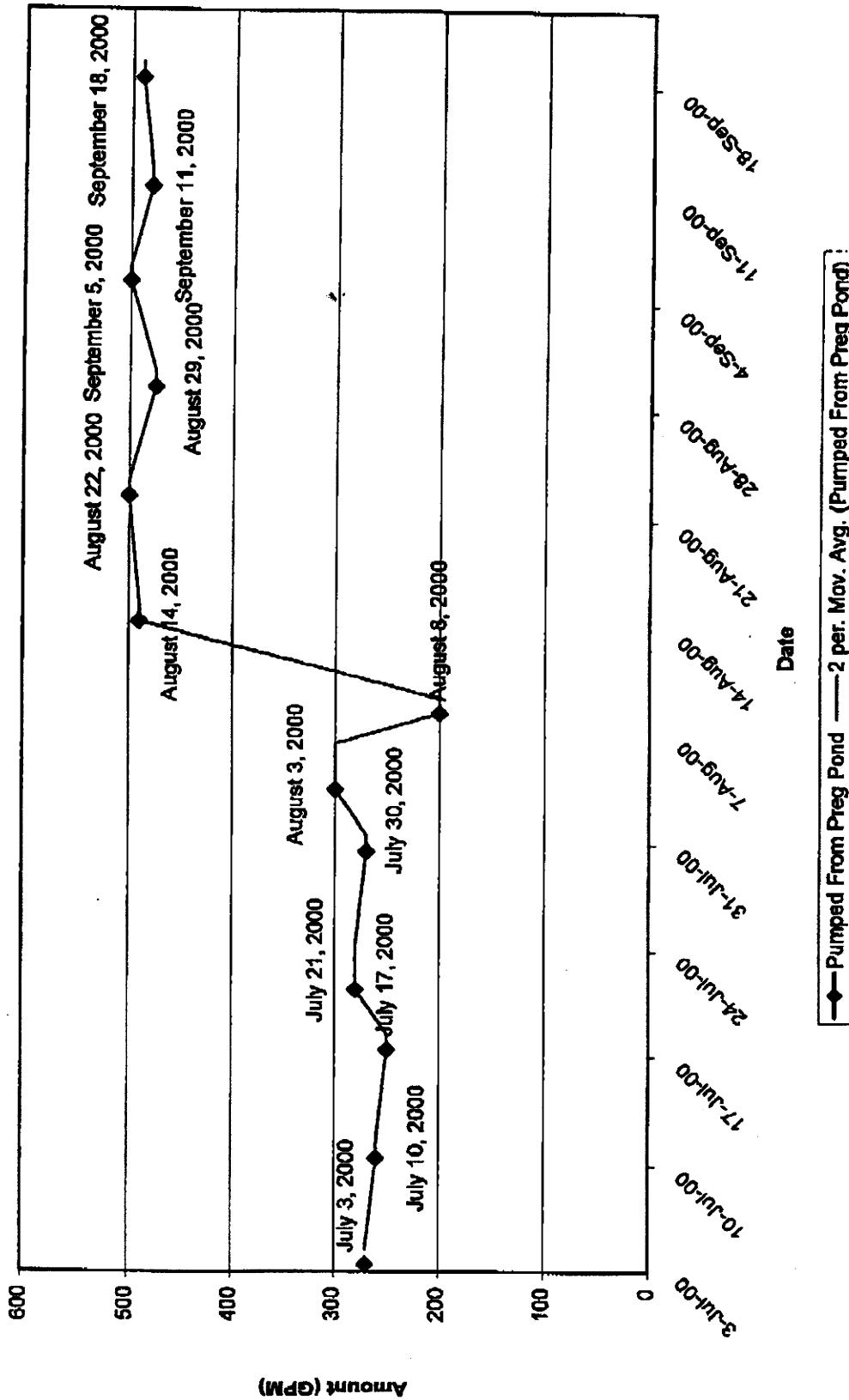
JBR ENVIRONMENTAL CONSULTANTS, INC.  
NORTH LILY Mining/Silver City Facility

September 25, 2000





### Weekly Preg Sump Pump Readings



**North Lily Mining Com,**  
**EVAPORATION SYSTEM**

July 3, 2000	100			
July 4, 2000	100			
July 5, 2000	100			
July 6, 2000	100			
July 7, 2000	100			
July 10, 2000	95			
July 11, 2000	95			
July 12, 2000	90			
July 13, 2000	90			
July 14, 2000	95			
July 15, 2000	225			
July 17, 2000		Recycle into Preg		
July 18, 2000	220			
July 19, 2000	220			
July 20, 2000	220			
July 21, 2000	220			
July 24, 2000		Recycle into Preg		
July 25, 2000		Recycle into Preg		
July 26, 2000	300	Pad and Preg		
July 27, 2000	300	Pad and Preg		
July 28, 2000	300	Pad and Preg		
July 30, 2000		Recycle into Preg	0.24	
July 31, 2000		Overflow	0.24	
August 1, 2000		Overflow	0.24	
August 2, 2000		Overflow	0.22	
August 3, 2000		Overflow	0.22	
August 6, 2000		Overflow Off Preg Recycle		
August 7, 2000		Overflow Off Preg Recycle		
August 8, 2000	360	Pad and Preg		
August 9, 2000	360	Pad and Preg		
August 10, 2000	360	Pad and Preg		
August 11, 2000	360	Pad and Preg		
August 12, 2000	360	Pad and Preg		
August 13, 2000	360	Rec	0.19	23.12
August 14, 2000	360	Rec	0.19	23.12
August 15, 2000	360	Rec	0.19	23.12
August 16, 2000	360	Rec	0.19	23.12
August 17, 2000	360	Rec	0.2	25
August 18, 2000	360	Rec	0.2	25
August 19, 2000	360	Rec	0.21	27
August 20, 2000	340	Rec	0.21	27
August 21, 2000	340	Rec	0.21	27

## KEY

N/R = Not Recorded

N/A = Not Available

**North Lily Mining Company**  
**EVAPORATION SYSTEM**

August 22, 2000	340	Rec	0.21	27	
August 23, 2000	340	Rec	0.21	27	
August 24, 2000	340	Rec	0.21	27	
August 27, 2000	350	Preg and Overflow	0.19	23.12	
August 28, 2000	220	Preg and Overflow	0.18	21.27	
August 29, 2000	220	Preg and Overflow	0.18	21.27	
August 30, 2000	340	Preg and Overflow	0.17	19.46	
August 31, 2000	200	Preg and Overflow	0.17	19.46	475
September 1, 2000	210	Preg and Overflow	0.16	17.72	
September 5, 2000		Recycle to preg pond	0.14	14.4	
September 6, 2000		Recycle to preg pond	0.14	14.4	
September 7, 2000		Recycle to preg pond	0.14	14.4	500
September 8, 2000		Recycle to preg pond	0.14	14.4	
September 9, 2000		Recycle to preg pond	0.13	12.84	
September 10, 2000		Recycle to preg pond	0.13	12.84	
September 11, 2000		Overflow Ponds	0.13	12.84	
September 12, 2000		Overflow Ponds	0.12	11.34	
September 13, 2000		Overflow Ponds	0.12	11.34	480
September 14, 2000		Overflow Ponds	0.12	11.34	
September 15, 2000		Overflow Ponds	0.12	11.34	
September 16, 2000		Overflow Ponds	0.12	11.34	
September 18, 2000		Recycle to preg pond	0.12	11.34	
September 19, 2000		Recycle to preg pond	0.12	11.34	
September 20, 2000		Recycle to preg pond	0.11	9.11	490
September 21, 2000		Recycle to preg pond	0.11	9.11	
September 22, 2000		Recycle to preg pond	0.11	9.11	
September 23, 2000		Recycle to preg pond	0.11	9.11	

**KEY**

N/R = Not Recorded

N/A = Not Available

02/02/00 11:11 FAX 003 200 2233

NORTH LILY MINE

FAX 003 200 2233 P1

 001

page 1

## NORTH LILY MINING COMPANY

## FAX transmitted

DATE: 9/25/00

TO: Gene Webb, Stephen Fletcher, Walt Shabert, Bob Baycr

FAX:

FROM: Elvira

RE: Weekly Reports

Hard copy to follow Yes    No   No of pages 2

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## MESSAGE

9/18 Raining Day here patching overFlow

pond pump in into overFlow &amp; pres

9/22 Trouble with new elec+pump's put a  
new one into pres to pump spray etc in  
overFlow

9/23 Excavation here Fixing Bob's etc.

working on pump motors, put gas pump  
into overFlow again

**North Lilly Mining Company**  
**WEEKLY REPORT**  
**Daily Sump Pump Readings**

Date	Time	Amount of Gallons Pumped to Empty	Initials
9/18	/	/	EE
9/19	/	/	EE
9/20	10:00	490 preg	EE
9/21	/	/	EE
9/22	/	/	EE
9/23	/	/	EE

**Evaporation System**

Date	Gallons Pumped from Preg. Pond	Other	Gallons Returned FT	Gallons Returned GMS	Initials
9/18	Rec. preg		.12	11.34	EE
9/19	4 over flow		.12	11.34	EE
9/20	11		.11	9.91	EE
9/21	11		.11	9.91	EE
9/22	11		.11	9.91	EE
9/23	11		.11	9.91	EE

**Leach Leak Detection**

Date	Time	Gallons Pumped	Gallons Returned	Initials
9/18	/	/	/	EE
9/19	/	/	/	EE
9/20	12:00	#25ump 22	/	EE
9/21	/	/	/	EE
9/22	/	/	/	EE
9/23	/	/	/	EE

**Attachment 2  
Leach Pad Material Fertility Analyses**

**SVL ANALYTICAL, INC.**

One Government Center • P.O. Box 929 • Kellogg, Idaho 83837-0929 • Phone: (208)764-1258 • Fax: (208)763-01

**REPORT OF ANALYTICAL RESULTS**

<b>CLIENT</b>	: JBR Environmental Consultants	<b>SVL JOB No.</b> : 95535
<b>CLIENT SAMPLE ID:</b> SCH-S		<b>SVL SAMPLE No.:</b> 243653
<b>Sample Collected:</b> 8/22/00 13:00		
<b>Sample Receipt :</b> 9/13/00		
<b>Date of Report :</b> 9/22/00	<b>As Received Basis</b>	<b>Matrix: SOIL</b>

Determination	Result	Units	Dilution Method	Test Date	Reference
Alkalinity, CaCO <sub>3</sub>	3.1	mg CaCO <sub>3</sub> /L	1 2320	9/20/00	3
Calcium-H <sub>2</sub> O Sol.	3.4	meq/L	1 6010B	9/21/00	
CEC	4.70	meq/100g	1 9081	9/21/00	
Spec. Cond.	3.2	mmhos	1 120.1	9/19/00	2
Magnesium-H <sub>2</sub> O Sol	0.9	meq/L	1 6010B	9/21/00	1
Sodium-H <sub>2</sub> O Sol.	22.8	meq/L	1 6010B	9/21/00	
pH Paste	8.38		1 6010B	9/21/00	
Sodium Abs Ratio	15.5		1 ASA M9	9/19/00	
Saturation Cap.	19.6	%	1 6010B	9/20/00	
Calcium	168000	ppm	1 Grav.	9/20/00	
Potassium	<500	ppm	10 6010B	9/17/00	2
Magnesium	81700	ppm	5 6010B	9/18/00	
Sulfate, SO <sub>4</sub>	10.0	meq/L	1 6010B	9/17/00	2
Nitrogen-TKN	72.0	ppm	25 300.0	9/20/00	1
Boron	<3.0	ppm	1 351.4	9/19/00	1
Manganese	2470	ppm	1 6010B	9/17/00	2
Phosphorus	372	ppm	1 6010B	9/17/00	2
% Sand	68.0	%	1 6010B	9/17/00	2
% Silt	24.0	%	1 ASA#9	9/19/00	
% Clay	8.0	%	1 ASA#9	9/20/00	
Textural Class	sandy loam		1 ASA#9	9/20/00	
			1 ASA#9	9/19/00	

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th Ed. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

Reviewed By: Blake Johnson

Date 9/22/00  
9/22/00 8:37

## SVL ANALYTICAL, INC.

One Government Gulch • P.O. Box 929 • Kellogg, Idaho 83337-0929 • Phone: (208)764-1238 • Fax: (208)762-689

## REPORT OF ANALYTICAL RESULTS

**CLIENT** : JBR Environmental Consultants      **SVL JOB No.** : 95535  
**SVL SAMPLE No.** : 243654

**CLIENT SAMPLE ID:** SCH-N  
**Sample Collected:** 8/22/00 13:30  
**Sample Receipt :** 9/13/00  
**Date of Report :** 9/22/00      **As Received Basis**

**Matrix:** SOIL

Determination	Result	Units	Dilution Method	Test Date	Reference
Alkalinity, CaCO <sub>3</sub>	2.4	mg CaCO <sub>3</sub> /L	1 2320	9/20/00	3
Calcium-H <sub>2</sub> O Sol.	24.1	meq/L	1 6010B	9/21/00	
CEC	3.70	meq/100g	1 9081	9/21/00	2
Spec. Cond.	19.2	mmhos	1 120.1	9/19/00	1
Magnesium-H <sub>2</sub> O Sol	1.9	meq/L	1 6010B	9/21/00	
Sodium-H <sub>2</sub> O Sol.	190	meq/L	1 6010B	9/21/00	
pH Paste	8.25		1 ASA M9	9/19/00	
Sodium Abs Ratio	52.7		1 6010B	9/20/00	
Saturation Cap.	19.5	%	1 Grav.	9/19/00	
Calcium	160000	ppm	10 6010B	9/17/00	2
Potassium	<500	ppm	5 6010B	9/18/00	2
Magnesium	76200	ppm	1 6010B	9/17/00	2
Sulfate, SO <sub>4</sub>	192	meq/L	500 300.0	9/20/00	1
Nitrogen-TKN	82.0	ppm	1 351.4	9/19/00	1
Boron	<3.0	ppm	1 6010B	9/17/00	2
Manganese	2310	ppm	1 6010B	9/17/00	2
Phosphorus	366	ppm	1 6010B	9/17/00	2
% Sand	72.0	%	1 ASA#9	9/19/00	
% Silt	20.0	%	1 ASA#9	9/20/00	
% Clay	8.0	%	1 ASA#9	9/20/00	
Textural Class	sandy loam		1 ASA#9	9/19/00	

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-2B; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

Reviewed By: Blake Johnson      Date 9/22/00  
9/22/00 8:30

**Attachment 3**  
**Analytical Results for Metcoric Water Mobility Extracts**

**SVL ANALYTICAL, INC.**

One Government Center

P.O. Box 929 ■ Kellogg, Idaho 83837-0929 ■ Phone: (208)764-3256 ■ Fax: (208)763-6

**REPORT OF ANALYTICAL RESULTS****CLIENT**

: JBR Environmental Consultants

SVL JOB No. : 95406  
SVL SAMPLE No.: 242616**CLIENT SAMPLE ID:** SCH-SSample Collected: 8/22/00 13:00  
Sample Receipt : 8/29/00  
Date of Report : 9/19/00% Moisture: 0.4%  
Matrix: ESOIL

Extract: MWMP 9/06/00

Determination	Result	Units	Method	Test Date	Reference
% Passing -200	15.1	g	Sieve	9/06/00	
Moisture to Sat.	636	mL		9/06/00	
MWMP TIME	24.0	(hr)	MWMP	9/06/00	
pH	8.85		150.1	9/12/00	
pH LIXIVIANT	5.86		150.1	9/06/00	1
pH Paste	9.12		ASA M9	9/15/00	1
Weight	5.00	kg		9/06/00	
TDS	510	mg/L Ext	160.1	9/11/00	1
Cyanide-WAD	<0.01	mg/L Ext	1677	9/14/00	
Sodium	85.8	mg/L Ext	200.7	9/14/00	
Nitrite-N	1.68	mg/L Ext	300.0	9/11/00	
Nitrate-N	19.7	mg/L Ext	300.0	9/11/00	
Sulfate, SO4	70.4	mg/L Ext	300.0	9/11/00	
Silver	<0.005	mg/L Ext	200.7	9/14/00	
Arsenic	0.135	mg/L Ext	206.2	9/13/00	
Barium	0.146	mg/L Ext	200.7	9/14/00	
Cadmium	<0.002	mg/L Ext	200.7	9/14/00	
Chromium	<0.006	mg/L Ext	200.7	9/14/00	
Mercury	0.0003	mg/L Ext	245.1	9/12/00	
Lead	0.089	mg/L Ext	239.2	9/14/00	
Selenium	0.004	mg/L Ext	270.2	9/14/00	

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 646, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th ED. 1992; 4) ASTM Method, 5140 CFR, Part 26;

Reviewed By: \_\_\_\_\_

*Beth Johnson*Date 9/19/00

9/19/00 13:30

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## SVL ANALYTICAL, INC.

One Government Gulch • P.O. Box 929 • Ketchum, Idaho 83347-0929 • Phone: (208)784-1258 • Fax: (208)783-  
1258

## REPORT OF ANALYTICAL RESULTS

CLIENT	: JBR Environmental Consultants	SVL JOB No. : 95406
CLIENT SAMPLE ID:	SCH-N	SVL SAMPLE No.: 242617
Sample Collected:	8/22/00 13:30	% Moisture: 0.5%
Sample Receipt :	8/29/00	Matrix: ESOIL
Date of Report :	9/19/00	Extract: MWMP 9/06/00

Determination	Result	Units	Method	Test Date	Reference
% Passing -200	10.0	g	Sieve	9/06/00	
Moisture to Sat.	579	mL		9/06/00	
MWMP TIME	24.0	(hr)	MWMP	9/06/00	
pH	8.56		150.1	9/12/00	1
pH LIXIVIANT	5.86		150.1	9/06/00	1
pH Paste	8.74		ASA M9	9/15/00	
Weight	5.00	kg		9/06/00	
TDS	1890	mg/L Ext	160.1	9/11/00	1
Cyanide-WAD	<0.01	mg/L Ext	1677	9/14/00	
Sodium	572	mg/L Ext	200.7	9/14/00	1
Nitrite-N	2.38	mg/L Ext	300.0	9/11/00	1
Nitrate-N	9.81	mg/L Ext	300.0	9/11/00	1
Sulfate, SO4	1680	mg/L Ext	300.0	9/11/00	1
Silver	<0.005	mg/L Ext	200.7	9/14/00	1
Arsenic	0.062	mg/L Ext	205.2	9/13/00	1
Barium	0.015	mg/L Ext	200.7	9/14/00	1
Cadmium	<0.002	mg/L Ext	200.7	9/14/00	1
Chromium	<0.006	mg/L Ext	200.7	9/14/00	1
Mercury	0.0004	mg/L Ext	245.1	9/12/00	1
Lead	0.076	mg/L Ext	239.2	9/14/00	1
Selenium	0.013	mg/L Ext	270.2	9/14/00	1

REFERENCES: 1) "Methods for Chemical Analysis of Water and Wastewater", EPA-600/4-79-20; 2) "Test Methods for Evaluating Solid Wastes, 3rd Edition", SW 846, 1994; 3) "Standard Methods for the Examination of Water and Wastewater", 18th Ed. 1992; 4) ASTM Method; 5) 40 CFR, Part 261

Reviewed By: Becky Johnson Date 9/19/00  
9/19/00 13:30

Attachment 4  
TCLP Analysis of Barren Pond Residue

RECEIVED SEP - 1 20

To: JBR Consultants  
 attn. Rich Pratt  
 8160 South Highland Drive, Ste. A-4  
 Sandy, UT 84093

Date: 8/31/00

Group #: 39743  
 Lab #: 00-U007875  
 Project: NORTH LILY MINING  
 Sample Desc: BP-01  
 Sample Matrix: SOIL  
 Date/Time Sampled: 8/14/00 , 9:30  
 Date/Time Received: 8/21/00 , 13:50

## CERTIFICATE OF ANALYSIS

PARAMETER	RESULT	MINIMUM REPORTING		METHOD	ANALYST
		LIMIT (MRL)	DATE ANALYZED		
<b>INORGANIC PARAMETERS</b>					
TCLP Ext. Solution pH, units	4.93	0.05	8/25/00 10:00		MJB
pH, solution selection, units	8.50	0.05	8/25/00 10:00	SW 846 9045	MJB
pH, after extraction TCLP, units	6.50	0.05	8/25/00 10:00	SW 846 9045	MJB
Arsenic (TCLP), as As, mg/L	< 0.2	0.2	8/29/00 10:51	SW-846 6010	JJT
Barium (TCLP), as Ba, mg/L	< 0.1	0.1	8/29/00 10:51	SW-846 6010	JJT
Cadmium (TCLP), as Cd, mg/L	< 0.01	0.01	8/29/00 10:51	SW-846 6010	JJT
Chromium (TCLP), as Cr, mg/L	< 0.02	0.02	8/29/00 10:51	SW-846 6010	JJT
Lead (TCLP), as Pb, mg/L	< 0.1	0.1	8/29/00 10:51	SW-846 6010	JJT
Mercury (TCLP), as Hg, mg/L	1.29	0.002	8/28/00 12:40	SW 846 7470A	MJB
Selenium (TCLP), as Se, mg/L	0.1	0.1	8/29/00 10:51	SW-846 6010	JJT
Silver (TCLP), as Ag, mg/L	0.56	0.01	8/29/00 10:51	SW-846 6010	JJT

NOTE: Sample not received on ice.

Approved By:

  
 David Gayer, Laboratory Director

MRL = Report detection limit

Page 1

(generic.rpt)

 6100 SOUTH STRATLER  
 SALT LAKE CITY UTAH 84107 6905  
 801 282 7299 PHONE  
 TOTAL P.19